VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Activity Report on

"Installation of Tomcat Server"

Advanced Java (BCS613D)

Submitted by

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Tomcat Server

Introduction

JSP programs are executed by a JSP Virtual Machine that runs on a web server. Therefore, you'll need to have access to a JSP Virtual Machine to run your JSP program. Alternatively, you can use an integrated development environment such as JBuilder that has a built-in JSP Virtual Machine or you can download and install a JSP Virtual Machine. One of the most popular JSP Virtual Machines is Tomcat, and it is downloadable at no charge from the Apache web site. Apache is also a popular web server that you can al o download at no cost. You'll also need to have the Java Development Kit (JDK) installed on your computer, which you probably installed when you learned Java programming. You can download the JDK at no charge from the www.sun.com web site.

System Requirements

- Operating System: Windows/Linux/MacOS
- Java Development Kit (JDK):JDK 8 or later
- RAM: Minimum 2 GB
- Disk Space: Minimum 500 MB free space

Pre-requisites

Before installing Tomcat, the following software must be installed:

- Java Development Kit (JDK)
- Downloaded from [Oracle](https://www.oracle.com/java/technologies/javasedownloads.html) or [OpenJDK](https://jdk.java.net /)
- Environment variable JAVA_HOME set to JDK installation path

Before installing Apache Tomcat, it is essential to ensure that the necessary software and environment configurations are in place. The most important requirement is the Java Development Kit (JDK), as Tomcat is a Java-based web server. At a minimum, JDK version 8 is required, though it is recommended to use a more recent Long-Term Support (LTS) version, such as JDK 11 or JDK 17, for better compatibility and security. The JDK can be downloaded from the official Oracle website or from the OpenJDK project, depending on user preference and licensing needs.

Steps to Install:

Here's what you need to do to download and install Tomcat:

1. Connect to jakarta.apache.org.
2. Select Download.
3. Select Binaries to display the Binary Download page.
4. Create a folder from the root directory called tomcat.
5. Download the latest release of jakarta-tomcat.zip to the tomcat folder.
6. Unzip jakarta-tomcat.zip
7. The extraction process should create the following folders in the tomcat directory
8. Use a text editor such as Notepad and edit the JAVA_HOME variable in the tomcat.bat file, which is located in the \tomcat\bin folder. Make sure the JAVA_HOME variable is assigned the path where the JDK is installed on your computer.
9. Open a DOS window and type \tomcat\bin\tomcat to start Tomcat.
10. Open your browser. Enter http://lQcalhost:8080. The Tomcat home page is displayed on the screen verifying that Tomcat is running.

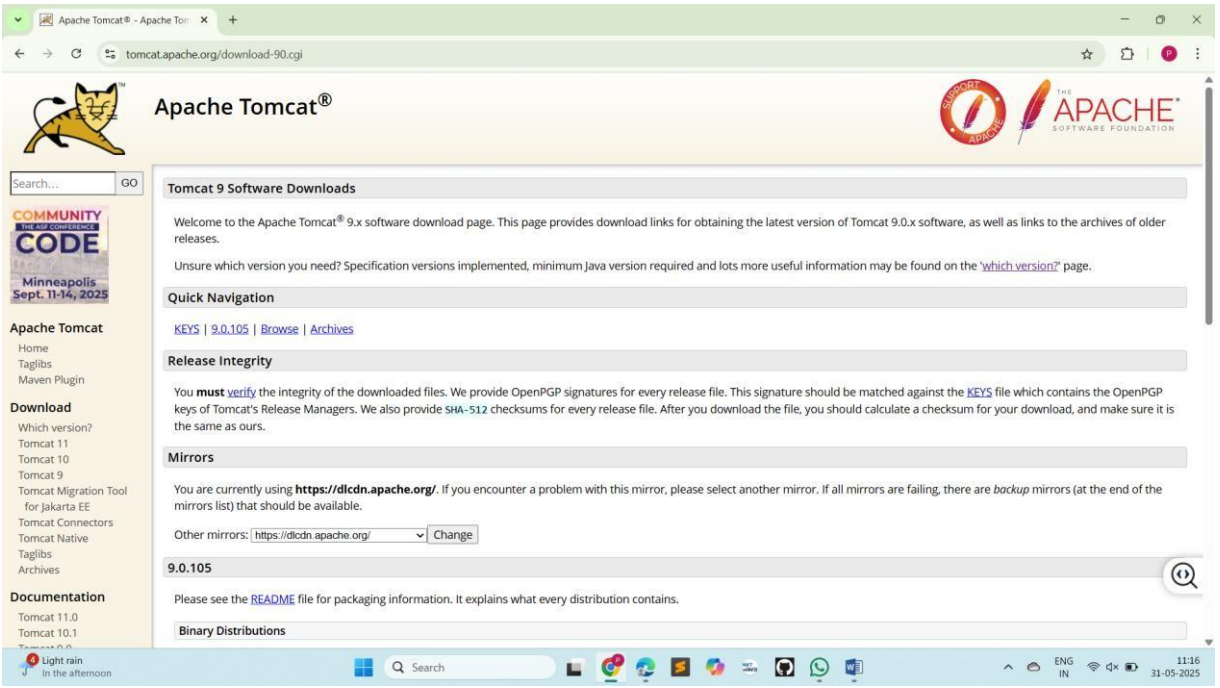

Fig 1.1: Apache Tomcat website.

Verify Installation

- Open a web browser and go to: http://localhost:8080
- The Tomcat welcome page should appear.

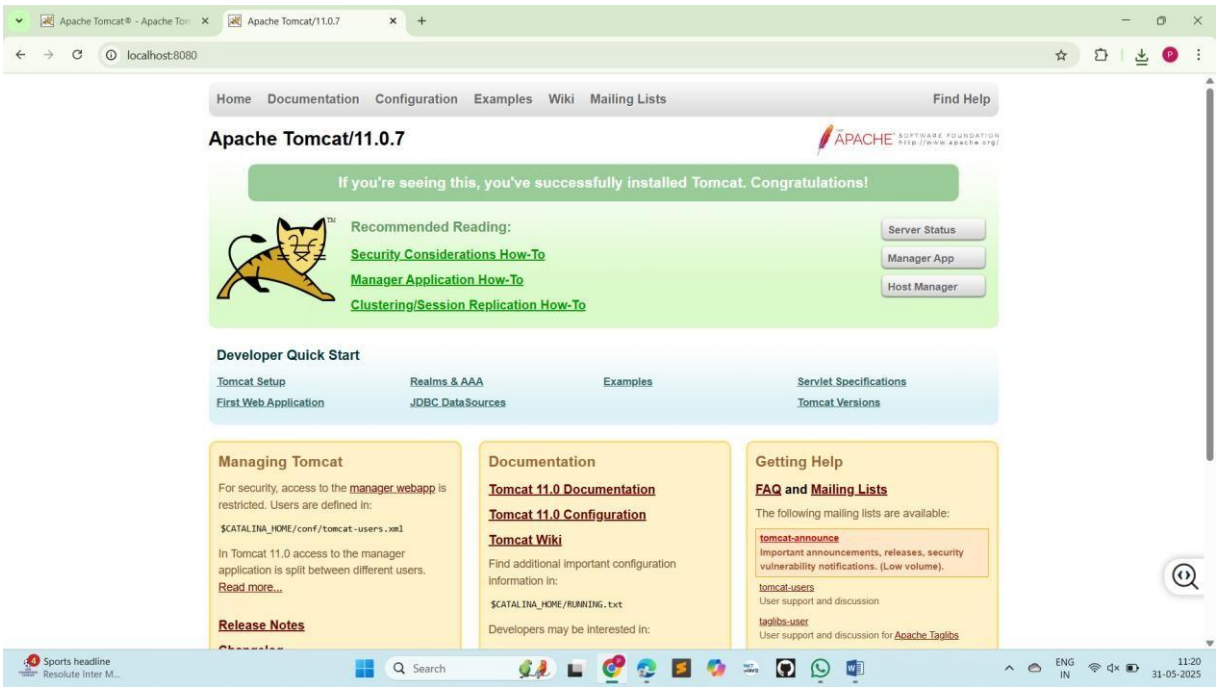

Fig.1.2: Verification of Installation.

Code:

A simple java Servlet code to run Using Tomcat server

```
import java.io.*; import
javax.servlet.*; import
javax.servlet.http.*;

public class HelloServlet extends HttpServlet {
     public       void       doGet(HttpServletRequest       request,
HttpServletResponse response)
        throws ServletException, IOException {

        response.setContentType("text/html"); // Set response type to HTML
PrintWriter out = response.getWriter(); // Get the output writer to send data to
client
        out.println("<h2>Hello from Tomcat!</h2>"); // Write HTML response
    } }
```

Line-by-Line Explanation

Imports Java input-output classes, mainly used for printing output.

Provides basic interfaces and classes for Servlets.

Provides classes for handling HTTP requests and responses.

- Defines a class called Hello Servlet.
- It **extends HttpServlet**, meaning it can handle HTTP requests (GET, POST, etc.).

This method is automatically called when the user sends an **HTTP GET request** (like opening a URL in a browser).

- It takes HttpServletRequest and HttpServletResponse as arguments.

Tells the browser that the response will be an **HTML page**.

- Prepares an output stream to send data (HTML in this case) back to the browser.

- Sends an HTML <h2> header to the browser

Output on Browser

When you access the servlet via:

bash

http://localhost:8080/HelloTomcatApp/hello You

will see the following in your web browser:

html
<h2>Hello from Tomcat!</h2>

Demonstration:

Fig.1.3: Gimps of Demonstration.